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09/492,454	01/27/2000	Xiaowen Yang	YANG 1	9889

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2000 M Street, N. W., 7th Floor
Washington, DC 20036-3307

EXAMINER

FAKHRAI, SAM S

ART UNIT	PAPER NUMBER
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2136

DATE MAILED: 04/20/2004

5

Please find below and/or attached an Office communication concerning this application or proceeding.

SL

Office Action Summary

Application No

09/492,454

Applicant(s)

YANG, XIAOWEN

Examiner

Sam Fakhrai

Art Unit

2136

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 April 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Argument

The applicant argues that Colligan, Ishibashi, and Nardone teach scrambling a frame header, which is not leaving a portion of a packet header unscrambled. The examiner's response is that while Colligan, Ishibashi, and Nardone teach do teach the scrambling of a frame header, this is not the same as scrambling an MPEG-2 transport packet header. Colligan, Ishibashi and Nardone all disclose the scrambling of MPEG-2 transport packets. Furthermore, as the applicant correctly points out, the MPEG-2 standard does not allow any scrambling of the header portion. Therefore, while Colligan, Ishibashi and Nardone do disclose the scrambling of frame headers, they also disclose that the packet headers remain entirely unscrambled because of the fact that they are MPEG-2 transport packet headers.

The amended claims have been addressed below.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 8, 17, and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Pat. No. 6,415,031 to Colligan et al.

2. Regarding Claim 8, Colligan discloses:

- A method of scrambling a packetized digital data stream, comprising:
 - Producing a data packet stream comprising a plurality of data packets (See column 10, lines 34-35, and “CONSTRUCT TS PACKET WITH ENCRYPTED TS PAYLOAD 1212” of Figure 12A); and
 - Scrambling a first portion of a data payload of at least some of said plurality of data packets within said data stream (See column 12, lines 58-60, and Figure 14E) and without scrambling a header of said some of said plurality of data packets (Colligan: Fig. 11A and column 9, lines 12-17. Note that the MPEG-2 standard does not allow scrambling/encryption of a transport packet header) while leaving remaining ones of said plurality of data packets unscrambled (Colligan: column 12, lines 50-60, and Figure 14E).

3. Regarding Claim 17, Colligan discloses:

- An apparatus for scrambling a packetized digital data stream, comprising:

- Means for producing a data stream comprising a plurality of data packets (Colligan: column 5, lines 58-63, and Figure 5A).
- Means for scrambling a first portion of a data payload of at least some of said plurality of data packets within said data stream (Colligan: Column 5, lines 37-39 and "REMOTE SERVER 404" of Figure 4), without scrambling a header of said some of said plurality of data packets (Colligan: Fig. 11A and column 9, lines 12-17. Note that the MPEG-2 standard does not allow scrambling/encryption of a transport packet header) while leaving remaining ones of said plurality of data packets unscrambled (Colligan: column 12, lines 50-60, and Figure 14E).

4. Regarding Claim 18, Colligan discloses:

- The data packet stream comprises an MPEG-2 digital data stream (Colligan: column 9, lines 18-49, and Figure 11A).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-6, 9-13, 15, 16, and 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colligan in view of U.S. Pat. No. 5,805,700 to Nardone et al.

6. Regarding Claim 1, Colligan discloses:

- A device to descramble a packetized data stream, comprising:
 - A receiver to receive a packet of a scrambled packetized digital data stream (Colligan: column 5, lines 64-66, and column 6, lines 1-4, and "SUBSCRIBER STATION 110" of Figure 4), said packet including a header portion (Colligan: "TS HEADER 1102" of Figure 13) and a data payload including a scrambled portion (Colligan: "TS PAYLOAD ENCRYPTED FOR ALL TS PACKETS 1404" of Figure 14A)
 - A descrambler to descramble the scrambled portion of the data payload of the packet (Colligan: column 13, lines 35-38);
 - Wherein said header portion is entirely unscrambled (Colligan: Fig. 11A and column 9, lines 12-17. Note that the MPEG-2 standard does not allow scrambling/encryption of a transport packet header).

However, Colligan does not disclose:

- The data payload including a scrambled portion and a clear, unscrambled portion.

Nardone discloses:

- Selective encryption of Basic Transfer Units (BTU's), in which the BTU's containing the start codes of I-frames are encrypted (Colligan: column 3, lines 45-48 and Figure 4).
- A data payload including a scrambled portion and a clear unscrambled portion (See examiner's note below).

The examiner notes the following regarding the Nardone disclosure above:

- An MPEG-2 Transport Stream packet payload could comprise two Basic Transfer Units, the first Basic Transfer Unit containing an I-frame start code. Thus the payload would include a scrambled portion and a clear, unscrambled portion.

Colligan could be modified by Nardone to arrive at the claimed invention in the following way:

- Data payload disclosed in Colligan could be modified to include a clear unscrambled portion as taught by Nardone

One of ordinary skill in the art would have found it obvious to apply the above modification because the use of the method of selective encryption disclosed in Nardone approximates the level of degradation achieved by total encryption while requiring only a fraction of the processor cycle cost (See Nardone, column 1, lines 45-49).

7. Regarding Claim 2, note that the additional limitation is disclosed by Nardone of the Colligan and Nardone system as applied to Claim 1 above. Specifically, Nardone

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discloses all of the claimed subject matter regarding Claim 1, as discussed above with respect to Claim 1, and also discloses:

- Selective encryption of Basic Transfer Units (BTU's), in which the BTU's containing the start codes of I-frames are encrypted (Nardone: column 3, lines 45-48 and Figure 4).
- In light of the examiner's note below, the scrambled portion of the data payload would be at a position such that it is preceeded and succeeded by clear, unscrambled portions within the packet.

The examiner notes the following regarding the Nardone disclosure above:

- An MPEG-2 Transport Stream packet payload could comprise three Basic Transfer Units, the second and center Basic Transfer Unit containing an I-frame start code. Thus, the scrambled portion of the data payload would be at a position such that it is preceeded and succeeded by clear, unscrambled portions within the packet.

8. Regarding Claims 3, 4, 5, and 6, note that the additional limitation is disclosed by Colligan of the Colligan and Nardone system as applied to Claims 1 and 2 above.

Specifically, Colligan discloses all of the claimed subject matter regarding Claims 1 and 2, and also discloses:

- The data packet stream is an MPEG-2 digital data stream (Colligan: column 9, lines 18-49, and Figure 11A).

- The packet contains compressed digital data (Colligan: column 9, lines 18-49, and Figure 11A, and note that MPEG-2 is a type of compressed digital data).
- The compressed digital data includes a video signal (Colligan: column 10, lines 10-12).
- The compressed digital data includes an audio signal (Colligan: column 10, lines 10-12).

9. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 6,415,031 to Colligan in view of Nardone.

10. Regarding Claim 9, Colligan discloses all of the claimed subject matter of Claim 8, as discussed with respect to Claim 8 above, but does not disclose:

- Scrambling leaves a second portion of said data payload of each of said at least some of said plurality of data packets unscrambled.

Nardone discloses:

- Selective encryption of Basic Transfer Units (BTU's), in which the BTU's containing the start codes of I-frames are encrypted (Nardone: column 3, lines 45-48 and Figure 4).
- Scrambling leaves a second portion of said data payload of each of said at least some of said plurality of data packets unscrambled (See examiners note below).

The examiner notes the following regarding the Nardone disclosure above:

- An MPEG-2 Transport Stream packet payload could comprise two Basic Transfer Units, the first Basic Transfer Unit containing an I-frame start code. Thus the payload would include a scrambled portion and a clear, unscrambled portion.

The system of Colligan and Akins III, et al. could be modified by Nardone to arrive at the claimed invention in the following way:

- The method of scrambling taught by Colligan could be modified such that the scrambling leaves a second portion of said data payload of each of said at least some of said plurality of data packets unscrambled as taught by Nardone.

One of ordinary skill in the art would have found it obvious to apply the above modification because the use of the method of selective encryption disclosed in Nardone approximates the level of degradation achieved by total encryption while requiring only a fraction of the processor cycle cost (Nardone: column 1, lines 45-49).

11. Regarding Claim 10, Colligan discloses:

- A method of scrambling a packetized digital data stream, comprising:
 - Producing a data stream comprising a plurality of data packets (Colligan: column 10, lines 34-35, and “CONSTRUCT TS PACKET WITH ENCRYPTED TS PAYLOAD 1212” of Figure 12A); and

- Scrambling every n th one of said plurality of data packets, where n is an integer greater than 1, leaving remaining ones of said plurality of data packets unscrambled (Colligan: column 12, lines 58-60, and Figure 14E).

However, Colligan does not disclose that the scrambling is done on only a portion of the packet.

Nardone discloses:

- Selective encryption of Basic Transfer Units (BTU's), in which the BTU's containing the start codes of I-frames are encrypted (Nardone: column 3, lines 45-48 and Figure 4).
- Scrambling leaves a second portion of said data payload of each of said at least some of said plurality of data packets unscrambled (See examiners note below).

The examiner notes the following regarding the Nardone disclosure above:

- An MPEG-2 Transport Stream packet payload could comprise two Basic Transfer Units, the first Basic Transfer Unit containing an I-frame start code. Thus the payload would include a scrambled portion and a clear, unscrambled portion.

The system of Colligan could be modified by Nardone to arrive at the claimed invention in the following way:

- The method of scrambling taught by Colligan could be modified such that the scrambling leaves a second portion of said data payload of each of

said at least some of said plurality of data packets unscrambled as taught by Nardone.

One of ordinary skill in the art would have found it obvious to apply the above modification because the use of the method of selective encryption disclosed in Nardone approximates the level of degradation achieved by total encryption while requiring only a fraction of the processor cycle cost (Nardone: column 1, lines 45-49).

12. Regarding claim 15, Colligan discloses:

- A method of descrambling a packetized digital data stream, comprising:
 - Receiving a data packet stream comprising a plurality of data packets (Colligan: column 10, lines 49-52 and Figure 12B).
 - Descrambling only a portion of every nth one of said plurality of data packets, where n is an integer greater than 1, leaving remaining ones of said plurality of data packets as received (Colligan: column 13, lines 32-35, and Figure 15).

However, Colligan does not disclose that the descrambling is done on only a portion of the packet.

Nardone discloses:

- Selective encryption of Basic Transfer Units (BTU's), in which the BTU's containing the start codes of I-frames are encrypted (Nardone: column 3, lines 45-48 and Figure 4).

- Scrambling leaves a second portion of said data payload of each of said at least some of said plurality of data packets unscrambled (See examiners note below).

The examiner notes the following regarding the Nardone disclosure above:

- An MPEG-2 Transport Stream packet payload could comprise two Basic Transfer Units, the first Basic Transfer Unit containing an I-frame start code. Thus the payload would include a scrambled portion and a clear, unscrambled portion.

The system of Colligan could be modified by Nardone to arrive at the claimed invention in the following way:

- The method of descrambling taught by Colligan could be modified such that the descrambling leaves a second portion of said data payload of each of said at least some of said plurality of data packets unscrambled as taught by Nardone.

One of ordinary skill in the art would have found it obvious to apply the above modification because the use of the method of selective encryption disclosed in Nardone approximates the level of degradation achieved by total encryption while requiring only a fraction of the processor cycle cost (Nardone: column 1, lines 45-49).

13. Regarding Claim 19, Colligan discloses:

- An apparatus for scrambling a packetized digital data stream, comprising:

- Means for producing a data packet stream comprising a plurality of data packets (Colligan: column 5, lines 58-63, and Figure 5A); and
- Means for scrambling every nth one of said plurality of data packets, where n is an integer greater than 1, leaving remaining ones of said plurality of data packets unscrambled (Colligan: column 5, lines 37-39 and "REMOTE SERVER 404" of Figure 4).

However, Colligan does not disclose that the scrambling is done on only a portion of the packet.

Nardone discloses:

- Selective encryption of Basic Transfer Units (BTU's), in which the BTU's containing the start codes of I-frames are encrypted (Nardone: column 3, lines 45-48 and Figure 4).
- Scrambling leaves a second portion of said data payload of each of said at least some of said plurality of data packets unscrambled (See examiners note below).

The examiner notes the following regarding the Nardone disclosure above:

- An MPEG-2 Transport Stream packet payload could comprise two Basic Transfer Units, the first Basic Transfer Unit containing an I-frame start code. Thus the payload would include a scrambled portion and a clear, unscrambled portion.

The system of Colligan could be modified by Nardone to arrive at the claimed invention in the following way:

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- The apparatus for scrambling taught by Colligan could be modified such that the scrambling leaves a second portion of said data payload of each of said at least some of said plurality of data packets unscrambled as taught by Nardone

One of ordinary skill in the art would have found it obvious to apply the above modification because the use of the method of selective encryption disclosed in Nardone approximates the level of degradation achieved by total encryption while requiring only a fraction of the processor cycle cost (Nardone: column 1, lines 45-49).

14. Regarding Claim 21, Colligan discloses:

- An apparatus for descrambling a packetized digital data stream, comprising:
 - Means for receiving a data packet stream comprising a plurality of data packets (Colligan: column 5, lines 64-66, and column 6, lines 1-4, and "SUBSCRIBER STATION 110" of Figure 4); and
 - Means for descrambling every nth one of said plurality of data packets, where n is an integer greater than 1, leaving remaining ones of said plurality of data packet as received (Colligan: column 13, lines 35-38).

However, Colligan does not disclose that the descrambling is done on only a portion of the packet.

Nardone discloses:

- Selective encryption of Basic Transfer Units (BTU's), in which the BTU's containing the start codes of I-frames are encrypted (Nardone: column 3, lines 45-48 and Figure 4).
- Scrambling leaves a second portion of said data payload of each of said at least some of said plurality of data packets unscrambled (See examiners note below).

The examiner notes the following regarding the Nardone disclosure above:

- An MPEG-2 Transport Stream packet payload could comprise two Basic Transfer Units, the first Basic Transfer Unit containing an I-frame start code. Thus the payload would include a scrambled portion and a clear, unscrambled portion.

The system of Colligan could be modified by Nardone to arrive at the claimed invention in the following way:

- The apparatus for descrambling taught by Colligan could be modified such that the descrambling leaves a second portion of said data payload of each of said at least some of said plurality of data packets unscrambled as taught by Nardone.

One of ordinary skill in the art would have found it obvious to apply the above modification because the use of the method of selective encryption disclosed in Nardone approximates the level of degradation achieved by total encryption while requiring only a fraction of the processor cycle cost (Nardone: column 1, lines 45-49).

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15. Regarding Claims 11, 16, 20, and 22, note that the additional limitation is disclosed by Colligan of the Colligan and Nardone system as applied to Claims 10, 15, 19, and 21 above. Specifically, Colligan discloses all of the claimed subject matter regarding Claims 10, 15, 19, and 21, as discussed above with respect to Claims 10, 15, 19, and 21, and also discloses:

- The data packet stream is an MPEG-2 digital data stream (Colligan: column 9, lines 18-49, and Figure 11A).

16. Regarding Claims 12 and 13, note that the additional limitation is disclosed by Colligan of the Colligan and Nardone system as applied to Claims 10, 15, 19, and 21 above. Specifically, Colligan discloses all of the claimed subject matter regarding Claims 10, 15, 19, and 21, as discussed above with respect to Claims 10, 15, 19, and 21, and also discloses:

- The data packet stream comprises compressed video data or compressed audio data (Colligan: column 10, lines 10-12).

17. Claims 7 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colligan in view of Nardone, as applied to Claims 1-6 and 10-13 above, and in further view of U.S. Pat. No. 6,021,199 to Ishibashi.

18. Regarding Claim 7, the system of Colligan and Nardone discloses all of the claimed subject matter regarding Claims 1 and 4, but does not disclose:

- Compressed digital data comprises a video signal and an audio signal.

Ishibashi discloses:

- Compressed digital data comprises a video signal and an audio signal
(Ishibashi: column 4, lines 29-32, and Figure 4).

The system of Colligan and Nardone could be modified by Ishibashi to arrive at the claimed invention in the following way:

- The compressed digital data disclosed in Colligan could include a video signal and an audio signal.

One of ordinary skill in the art would have found it obvious to apply the above modification because a data packet stream with compressed audio and compressed video, can be used to store the stream on a DVD medium as shown by Ishibashi et al. (Ishibashi: column 4, lines 29-32, and Figure 4).

19. Regarding Claim 14, the system of Colligan and Nardone discloses, all of the claimed subject matter regarding Claim 10, as discussed with respect to Claim 10 above, and also discloses:

- The data packet stream comprises compressed video data or compressed audio data (Colligan: column 10, lines 10-12).

However, the system does not disclose:

- The data packet stream comprises compressed video data and compressed audio data.

Ishibashi discloses:

- The data packet stream comprises compressed video data and compressed audio data (Ishibashi: column 4, lines 29-32, and Figure 4).

The system of Colligan and Nardone could be modified by Ishibashi to arrive at the claimed invention in the following way:

- The data packet stream disclosed in Colligan could include compressed video data and compressed audio data.

One of ordinary skill in the art would have found it obvious to apply the above modification because a data packet stream with compressed audio and compressed video, can be used to store the stream on a DVD medium as shown by Ishibashi et al. (Ishibashi: column 4, lines 29-32, and Figure 4).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The prior art made record of and not relied upon is considered pertinent to applicant's disclosure.

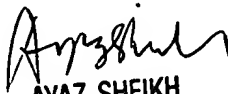
U.S. Pat. No. 6,424,714 to Wasilewski et al., U.S. Pat. No. 5,721,778 to Kubota et al., U.S. Pat. No. 5,920,626 to Durden et al., and U.S. Pat. No. 5,684,876 to Pinder et al. are each considered particularly pertinent to the applicant's claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Fakhrai whose telephone number is 703-305-8767. The examiner can normally be reached on M-F, 9:30 AM – 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh, can be reached at 703-305-9648. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

ssf
April 13, 2004


AYAZ SHEIKH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100